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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,559	11/20/2001	Kenya Wada	216202US3	8756
40575	7590	03/17/2004	EXAMINER	
KCO LAW P.L.L.C.			HASSANZADEH, PARVIZ	
P. O. BOX 220472			ART UNIT	PAPER NUMBER
CHANTILLY, VA 20153-0472			1763	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/988,559	Applicant(s) WADA ET AL.	
	Examiner Parviz Hassanzadeh	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 5-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, method claims 1-4, in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the method cannot be used for a stationary substrate and the search for the method claims would necessarily include search for the apparatus claims. This is not found persuasive because the claim 1 does not requires a moving substrate and the steps of removing oxygen, supplying humidified inert gas and irradiating the substrate can be performed on a stationary substrate; and the search required for the method claims are not necessarily coextensive with the search required for the apparatus claims.

The requirement is still deemed proper and is therefore made FINAL.

Claims 5-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Group II, apparatus, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

it is suggested to cancel the non-elected claims 5-11 in order to expedite the prosecution of the application.

Drawings

The drawing was received on 1/16/04. This drawing is acceptable by the Examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The fact that "the substrate is treat in a treating chamber which is maintained at a reduced pressure as the substrate is transferred therethrough during the treating process" is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Page 9 of the specification describes the treating chamber 12 including an entrance opening 12a and an exit opening 12b for admitting in and sending out the substrate through the chamber, and on page 12, it further requires the chamber including an exhaust pipe 33 so that the negative pressure is maintained in the chamber during the treatment process.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al (JP 2001-137800) in view of Kanai et al (US Patent No. 5,520,740).

Kinoshita et al teach a method for treating a surface of a substrate plate 10 as shown in Fig. 10 (front drawing) under irradiation of ultraviolet ray emitted from a dielectric barrier discharge lamp 1, the method comprising the steps of:

supplying humidified inert gas containing mixture of inert gas and water via feed pipe 15 toward the substrate 10 to humidify the treating surface and surrounding atmosphere of the substrate; and

irradiating the treating surface of the substrate with ultraviolet ray from the dielectric barrier discharge lamp 1.

Kinoshita et al fail to teach removing oxygen on and in the vicinity of the treating surface of the substrate (abstract).

Kanai et al teach a method of treating the surface of a substrate wherein the surface of the substrate is purged using an inert gas such as Ar as the substrate is transferred into a processing chamber via a gate gas supply 1016 and the exhausted via exhaust pipe 1018 in order to sufficiently isolate vacuum vessel from each other (column 42, line 59 through column 43, line 14, column 52, lines 44-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the purging mechanism as taught by Kanai et al in the method of Kinoshita et al in order to isolated the treating chamber from the adjacent units. The purging mechanism would inherently remove oxygen on and in the vicinity of the treating surface of the substrate.

Regarding claim 2: the purging gas is an inert gas such as argon (Kanai et al, column 42, line 59 through column 43).

Regarding claim 3: the humidified inert gas mixture includes nitrogen (Kinoshita et al, paragraph 0012, 0021).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al (JP 2001-137800) in view of Kanai et al (US Patent No. 5,520,740) as applied to claims 1-3 above, and further in view of Laethem et al (US Patent No. 4,188,199).

Kinoshita et al in view of Kanai et al teach all limitations of the claims as discussed above except for the oxygen or air removing gas is introduced in opposite direction of the substrate transfer direction and the humidified inert gas is introduced obliquely in a forward direction of the substrate transfer direction.

Laethem et al teach a method of treating the surface of a continuously longitudinally moving substrate wherein the treating gases are introduced at an oblique angle and in the moving direction of the substrate as shown in Fig. 2 in order to improved uniform exposure of the surface of the substrate to treating gases (column 1, lines 38-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the oblique angle exposure mechanism as taught by Laethem et al in the method of Kinoshita et al in view of Kanai et al in order to improve the uniformity of the exposure of the treating gases with the surface of the moving substrate.

Response to Arguments

Applicant's arguments filed 1/16/04 have been fully considered but they are not persuasive. Applicants assert that Kanai teach gas gate means for preventing a film-forming raw material gas used in one vacuum vessel from dispersing into the other vacuum vessel, that is, for blocking the gas in one chamber from flowing into another.

Examiner argues the present claims do specify that “the substrate plate is treated in a chamber maintained under reduced pressure”.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

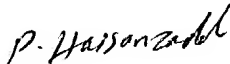
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parviz Hassanzadeh whose telephone number is (571)272-1435. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Gregory Mills can be reached on (571)272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1763

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Parviz Hassanzadeh
Primary Examiner
Art Unit 1763

March 11, 2004